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SWAZILAND

ANNUAL MEDICAL AND SANITARY REPORT

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FOR THE YEAR, 1967.

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SWAZILAND

ANNUAL MEDICAL AND SANITARY REPORT

1967

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INTRODUCTION

Swaziland has an area of 6,704 square miles and is bordered on the north, west and south by the transvaal, and on the east by Mocambique and Zululand.

The Territory is geographically divided into four well defined regions, running from north to south, namely the mountainous highveld in the west with an altitude of 3,500 and 5,000 feet, the middleveld with an average altitude of 2,000 feet; and the lowveld or bushveld with an altitude of 1,000 to 300 feet; and the Lubombo Plateau on the east, with an altitude of 2,000 feet. Scenically the Territory is one of the more attractive parts of Africa. The highveld has a temperate climate and frosts occur during winter. The climate of the middleveld is subtropical, although every few years a frost does occur.

Rainfall, which occurs chiefly in the summer, varies between approximately 30" a year in the lowveld. Drizzle and mists are frequent in the highveld areas. The country is well watered by numerous perennial streams and rivers, some of which are of a considerable size and now provide water for three large irrigations schemes, which have been established at Mhlume in the north-east, at Big Bend in the east (at both of which sugar is grown) and at Malkerns in the centre of Swaziland (which produces rice, sub-tropical fruit and citrus).

In addition to the irrigation schemes, other important agricultural activities are cattle ranching and seed cotton production in the bushveld and sub-tropical fruit, maize and rice production in the middleveld, in the southern portion of which a considerable amount of tobacco is also grown. In the mining field, Havelock Mine in the north-west is a most important producer of asbestos, and with the opening of the railway in November, 1964 connecting Swaziland with Lourenco Marques, the mining of iron ore at Ngwenya and of coal at Mpaka got underway. A pulp mill and a sawmill are operating at two of the forestry concerns in the highveld. Cotton ginnery, meat canning factory and a brewery now operate at Matsapa Industrial Area.

A census of the total population was held in May 1966. This was the first census of all the people in Swaziland.

The figures are as follows:

African	362,367
Europeans	7,987
Other Non Africans	4,217
Total	374,697

One half of the area of the territory is in communal ownership of the Swazi Nation and the remainder owned by individual tenure farmers. The Swazi have the exclusive use of the communal tenure areas and the remainder is open to farmers of all races without discrimination. Swazi dwellings for the most part consist of wattle-and-daub structures, or bee-hive huts, and small family collections of these huts are widely dispersed. Other than in the neighbourhood of the larger towns, there are no villages. Whilst the agricultural activities of the Swazi are still, in the main, concentrated on the raising of cattle and goats and the cultivation of maize, the work of the Agricultural Department is now producing results, and both the standard and scope of Swazi farming are improving year by year.

The following hospitals exist:

.../

A. Run by Government

Mbabane	175 beds
Hlatikulu	163 beds
Piggs Peak	50 Beds
Mankaiana	33 beds
Matsapa (Tuberculosis)	200 beds
Goedgegun	12 beds
	633
Mental	700

B. Run by Missions

Raleigh Fitkin Memorial, Manzini	320 beds
Good Shepherd, Stegi	67 beds

C. Run by Industry

Havelock Mine Hospital	65 beds

D. Run Privately

St. Michael's Clinic	12 beds
Total	896 beds

Apart from these formal hospitals there are two bedded dispensaries or clinics run by industrial concerns which can accommodate up to about 20 patients each.

The rural areas are catered for by 44 clinics staffed by trained nurses, 27 of them being conducted by Missions and 17 by Government. The Southern area of Swaziland is fortunate in having had a doctor appointed by the Save the Children Fund who runs a mobile clinic and conducts regular clinics at eight different places.

There were 50 doctors, of whom 12 were licensed medical practitioners, 2 dental surgeons in the territory in 1967. 2 of the doctors were not in practice. Of the 48 practicing doctors, 17 were concerned with Government medicine, 9 with Mission work, 9 with Industrial Medicine, 12 in private practice, and 1 doctor was concerned with Save the Children Fund.

The Mbuluzi Leper Hospital, situated 10 miles from Mbabane and run by the Nazarene Mission, with the assistance of a Government grant, copes most adequately with the small number of lepers in the Territory. There is no mental hospital, and dangerous and violent lunatics are detained and treated in sections of the gaols.

The British Red Cross Society is now running Infant Welfare Clinics at Mbabane, Hlatikulu, Stegi, Piggs Peak, Manzini, Kwaluseni, Mhlambanyati and Goedgegun, at which most useful work is being done. The Save the Children Fund has started a school feeding scheme.

The Public Health Services of the territory are centred at the Health Office in Manzini for the control of Malaria and Bilharzia and at Mbabane whic controls environmental health, Health Education and a Public Health Nursing Unit. There is a pathology Laboratory at which routine serological, biochemical bacteriological and haematological investigations are carried out.

The Medical Association of Swaziland whose members include private practitioners, medical missionaries and Government medical officers, hold quarterly meetings, which are well supported and which make up to some extent for the lack of professional contact so common in territories such as Swaziland.

.../

The training of nurses in Swaziland is carried out at the Ainsworth Dickson Training College attached to the Raleigh Ritkin Memorial Hospital, where training for the High Commission Territories Nursing Council qualifications in General Nursing, lasting 4 years, and in Midwifery, lasting 1 year, is given. The Ainsworth Dickson Training College can at present train sufficient nurses for the needs of Swaziland. Dispensers are trained at Government Hospitals as required. Laboratory Assistants are trained at the T.B. Centre W.H.O. Laboratory by a W.H.O. technician. This laboratory does Public Health Work as well as the T.B. laboratory investigation for the whole territory.

CHAPTER I

REVIEW OF THE YEAR'S WORK

The Hon. Dr. Allen Nxumalo became Minister of Health on 25/4/67 and the Medical Department became the Ministry of Health. Dr. Charles Runciman held the combined posts of Permanent Secretary/Director of Medical Services.

2. 1967 proved a very good year for recruitment and all medical officer posts were filled for the year. Dr. Friedman was appointed Senior Medical Officer on 1/7/67. Dr. Behan was appointed Medical Officer in November, 1967 and Dr. Parker was recruited in December, 1967.

The following Staff Nurses were promoted to Sisters:-

S. Khoza, A. Mahluza, E. Nxumalo and Julia Zwane.

The supply of trained nurses continued to exceed the demand but the nursing establishment was increased by some twenty-six nurses.

3. Buildings including Hospitals and Clinics

A Central Medical Stores was established at Matsapa. The two pharmacists, normally stationed at Mbabane and Hlatikulu Hospitals, were transferred to the C.M.S. together with two dispensers, 3 pupil dispensers, as well as clerks and other personnel.

The purpose of the C.M.S. is to order, store and despatch all drugs and dressings throughout the country. In addition, many drugs and stock mixtures are manufactured on the spot and it will also serve as a centre for training dispensers.

The Public Health Laboratory diversified its services to include Public Health measures so that in addition to identification of Tuberculosis, a wide range of other medical laboratory investigations are undertaken. Blood chemistry, cultures and sensitivities, water and milk analysis are all routinely performed. Cytological techniques for cervical cancer were also introduced.

Sera and cultures were made in the Laboratory and three trainee Laboratory Assistants were appointed.

The Tuberculosis and Mental hospitals as part of the Matsapa Complex became fully operational. The T.B. Hospital has a daily average in-patient rate of 120 patients and likewise the Mental Hospital accommodates an average of 120 patients per day. The opening of these two hospitals increased the bed potential of the country by approximately 900 beds.

A health centre situated in the centre of Mbabane was opened with a staff of 11 specially trained public health nurses. It deals with 1,000 people a month, providing maternity and Child Welfare, health education, nutritional aid and advice and immunization and vaccination services.

In Hlatikulu Hospital the T.B. wards were converted into a General Ward. At Mbabane Hospital work was commenced on a major expansion programme. As T.B. patients were transferred to Matsapa the T.B. wards were converted into an Out-Patient department with consulting rooms, laboratory, dispensary, doctors office. A large waiting room was built with blackboards so that Health Education talks may be given while patients wait to be seen by the doctor. A canteen to provide refreshments for waiting patients was also planned. The Out-Patients department was opened in November.

At the same time work was commenced on the erection of a second storey for the hospital thus enlarging the hospital from 175 beds to 312 beds. The project is expected to be completed in 1969.

In Government Hospitals the total admissions of both full-paying and part-paying patients fell by about 25%. The number of operations performed increased but the number of Out-patient attendances at Hospitals and clinics

were less than in 1966. The number of ante-natal examinations and confinements at Hospitals continued to rise. Maternity and Child Welfare services throughout the country continued to be well supported.

The total expenditure of the Ministry rose to R825,314 for all Medical and sanitary services, and represents approximately 9% of the total budget for the country.

4. Significant Diseases

Tuberculosis - the work of the T.B. Control Unit progressed well. Again there was a significant rise in the number of cases voluntarily seeking treatment.

Malaria - as predicted last year the increase of malaria rose to 66 cases with 2 deaths following the heavy rains and Cyclone Cloud in 1966.

Malnutrition - the number of cases of malnutrition and kwashiorkor treated in hospitals showed no increase or decrease.

Smallpox - there were 25 cases of Smallpox with no deaths reported during the year. A total of 51,000 vaccinations against Smallpox were carried out.

Typhoid - the number of cases of Typhoid was 127 with 10 deaths.

5. Post Graduate Courses - 1967

Sister Priscilla Mdiniso attended a course on Hospital Administration in the United Kingdom.

Mr. D. Eckard, Senior Health Inspector, attended a course on Bilharzia in Alexandria U.A.R.

Official Visitors - 1967

1. C.M. Carruthers, Esq. - Regional Director of Oxfam.
2. Dr. E. Denman - Orthopaedic Surgeon from Swindon, United Kingdom.
3. Dr. H.J.L. Burgess - Inter-country Nutritional Consultant, W.H.O.
4. S. Hoelgaard, Esq. - U.N.I.C.E.F., Kampala.
5. Dr. Roberts - W.H.O. Representative, Lusaka.
6. Dr. Pariof - Tuberculosis Adviser, W.H.O., Brazzaville.

CHAPTER II

COMMUNICABLE DISEASES

1. TUBERCULOSIS

GENERAL

Activities of the National Tuberculosis Control Centre continued as a whole to proceed in a satisfactory manner during the year under review. However, the negative repercussions of the inconsiderate transfers of specially trained clerical staff pointed out in the previous annual report, aggravated by the excessive delays in appointing replacements, continued to be felt during the first half of the year. In addition,,the hasty opening of the Matsapa Tuberculosis Hospital added an extra and untimely responsibility to the National Tuberculosis Centre, and precious time had to be dedicated to, under the existing epidemiological situation, less important clinical work at the expense of more vital field activities.

As a result, contact and co-operation between the periphery and the National Tuberculosis Control Centre, as well as between the various units of the Centre itself, deeply deteriorated and consequently quality of work performed during the first six months of the year left much to be desired. Furthermore, and in so far as emphasis had to be given to re-training clerical staff, re-organisational and supervisory activities, all efforts aiming at redressing this grave situation, progress and development of the National Tuberculosis Programme suffered a prolonged and serious set-back and could not be resumed before late in the year.

This notwithstanding, a great achievement, namely the launching of the mass BCG vaccination and smallpox immunization programme, marked the year under review. With the launching of the vaccination programme, the country's National Tuberculosis Programme became at last a comprehensive one in as much as it now includes not only integrated diagnostic and curative activities but also large scale preventive measures.

Staff of an extra thirty peripheral health centres recieved training in basic tuberculosis control measures recording and reporting procedures and therefore the total number of health units co-operating in the fight against tuberculosis increased from twenty in 1966 to fifty-five by the end of 1967.

All diagnostic curative preventive and supervisory measures applied throughout the year by this country-wide network of fifty five health units in accordance with the methods, procedures and standards set up by the National Tuberculosis Control Centre, proved to be manageable and efficacious and well within the economical possibilities of the country and its existing health infrastructure.

OPERATIONAL ACCOMPLISHMENTS

These are presented in detail in the annexed tables; however the following features are to be pointed out:-

- the 34% increase in the number of diagnostic bacteriological examinations (see tab, 2).

- the 19% increase in the number of patients found to be excreting acid-fast bacilli (see tab. 2).

- the 45% increase in the number (from 574 to 835) of patients who started specific chemotherapy;

- the fact that these significant rises are only due to the establishment of basic diagnostic and treatment services within the newly activated peripheral health centres.

In addition to its specialized investigations, the Tuberculosis Control Centre Laboratory performed 4562 general laboratory investigations (see tab. 7) and is now well on its way to becoming the country's Central Public Health Laboratory.

TABLE 1

YEARLY SUMMARY FOR T.B. CONTROL 1967

Test Area - Population 98,500
No. agencies 19
Other Areas - Population 268,000
No. agencies 36

	Manzini District (test area)	Other Districts	Whole Country
Case Finding			
Smears	5283[*]	4042[*]	9325[*]
Primary Cultures	5283[*]	4042[*]	9325[*]
X-Ray films	3388	589	3977
Cases, microscopy only	230	309	539
Cases, culture only	175	177	352
Suspects with X-R cavity	94	50	144
Suspects without X-R cavity	345	316	661
Treatment			
End previous year	933	230	1163
Started	467	368	835
Resumed or transfer in	491	760	1251
Interrupted, died or transfer out	1071	729	1800
Completed	149	27	176
End present year	871	602	1473
Follow-up			
Defaults	2130	2168	4298
Home visits to defaulters	1366	549	1915
Smears	1288	1966	3254
Cultures	2372	1234	3606
X-Ray films	1927	195	2122
Sensitivity tests primary and follow-up	752	534	1286
Supervisory visits to peripheral health centres	57	95	152
Other Activities			
Group X-Ray examinations	-	4989	4989
Nurses completed training	-	30	30
Lab. workers completed training	-	2	2

[*] all figures represent number of patients examined.

TABLE 2

BACTERIOLOGICAL EXAMINATIONS (MICRO-CULTURES) PERFORMED IN 1965-1966-1967

No. of exams. and results	Origin of patients and year of exam.	T.B. Centre			(Other Centres			Whole Country			T.B. Centre	Other Centres	Whole Country
		1965	1966	1967	1965	1966	1967	1965	1966	1967	1965	1966	1967
No. Bact. Exams.		2145	2617	2689	2975	4347	6636	5120	6964	9325	7451	13958	21409
No. Positive		181	213	182	537	534	709	718	747	891	576	1780	2356
% Positive		8.4	8.1	6.8	18.1	12.3	10.7	14	10.7	9.6	7.7	12.8	11

TABLE 3

CASE YIELD BY DIRECT MICROSCOPY
BY DISTRICT AND BY TYPE OF HEALTH CENTRE
FOR PERIOD JANUARY-DECEMBER 1967

District	Type of Centre	No. Centres Operating in 1967	Operating Centres X Months	No. Examined	No. Positive	Per Centre Month		Positive Rate
						Exam.	Pos.	
Manzini (Test Area)	T.B. Centre	1	12	2689	119	224	9.9	4.4%
	Hospital	1	12	370	38	30.8	3.2	10.0%
	Rural Clinic	17	180	2224	73	12.4	0.4	3.3%
Total		19	204	5283	230	25.9	1.1	4.4%
Hhohho	Hospital	3	36	1395	89	38.7	2.5	6.4%
	Rural Clinic	9	81	309	28	3.8	0.3	9.1%
Total		12	117	1704	117	14.6	1	6.9%
Shiselweni	Hospital	2	24	1174	105	48.9	4.4	8.9%
	Rural Clinic	9	99	637	37	6.4	0.4	5.8%
Total		11	123	1811	142	14.7	1.2	7.8%
Lubombo	Hospital	1	12	49	2	4.1	0.2	4.1%
	Rural Clinic	12	143	478	48	3.3	0.3	10.0%
Total		13	155	527	50	3.4	0.3	0.9%
Total Whole Country	All Types	55	599	9325	539	15.6	0.9	5.8%

NOTES

1) All direct microscopies were performed at the T.B. Centre.

2) Number examined at the T.B. Centre (2689) refers to persons who presente themselves for examination on their own accord.

3) Number examined at other centres refers to sputum specimens forwarded for examination to the T.B. Centre and to persons referred, the total number of which was 587 with 14 positive on direct microscopy.

TABLE 4

BCG/SP SCHOOL VACCINATION CAMPAIGN

(BCG)

Period	Eligible*			BCG vaccinated No.			BCG coverage %			Working Days**
	0-4	5-14	0-14	0-4	5-14	0-14	0-4	5-14	0-14	
18-9-1967 to 14-12-1967	6354	10462	16816	2298	5842	8140	36.2	55.8	48.4	61

NOTES

* From 1966 complete census.

** Working days correspond to school days.

TABLE 5

BCG/SP SCHOOL VACCINATION CAMPAIGN

(Smallpox)

Period	Eligible*			Primary Vacc.			Revaccinations			Tot. Vacc. and % Cover in ( )
	0-4	5-14	15+	0-4	5-14	15+	0-4	5-14	15+	
18-9-1967 to 14-12-1967	6354	10462	18623	1962	3179	453	323	2664	1211	9792 (28)

NOTES

* From 1966 complete census.

Working days as for BCG vaccinations.

TABLE 6

T.B. REGISTER END 1967

		Test Area T.B. Centre	Other Centre	Other Areas	Whole Country
Under Treatment at end of quart.	Cases	283	299	544	1136
	Suspects	192	83	46	321
	Contacts	11	3	2	16
	Total	486	385	602	1473
Indexed at end of quart.	Cases	735	518	1059	2312
	Suspects	1124	387	981	2492
	Contacts	158	85	25	268
	Total	2017	990	2065	5072

NOTE

CASE indicates a patient suffering from bacteriologically confirmed pulmonary tuberculosis.

SUSPECT indicates a possible sufferer from pulmonary tuberculosis but in whom the disease has not been bacteriologically confirmed.

TABLE 7

GENERAL INVESTIGATIONS PERFORMED IN 1967
BY THE T.B. CENTRE LABORATORY

Specimen	Tests	Total	Specimen	Tests	Total
Blood	Widals	233	Sputum	Culture for Non-TB organisms	30
	Grouping	301			
	Rh. Factor	301		Examination for Asbestos bodies	3
	Vi. Agglutinations	157		Cancer cell staining	26
	V.D.R.L. tests.	61	Skin	Scraping for Leprosy	5
	Haemoglobins	212			
	Red Cell Count.	107	Abdominal Fluid	Culture	8
	White Cell Count.	67	Ascitic Fluid	Microscopy	6
	Diff. Count.	80			
	Total Protein	145		Culture	6
	Albumin/Globulin ratio	67		Cancer cell staining	6
	Blood Sugars	28	Prostatic Smears		1
	Sugar Tolerance Test	1	Semen	Complete examination	1
	Blood Urea	30	Other		
	Total Cholesterol	54	Cytology		10
	Free Cholesterol	50	Veterinary		
	Esters Cholesterol	50	Department:	Tissues Cultures of lung and liver, etc.	5
	Bilirubin	15			
	Alkaline Phosphatase	5	Public Milk Supply	Bacteriological exam.	151
	Thymol Turbidity	2			
	Acid Phosphatase	6		Total Solids	20
	Uric Acid	5		Chemical tests, fat contents, etc.	46
	Medico Legal	1		Preservative	5
	E.S.R.	6	Public Health Water Supply		
	Blood Cultures	57			
	Blood Platelets	1		Bacteriological exam.	68
				Chemical Tests	2
Stools	Micro & Culture	222	Public Health Food Supply		
Urine	Micro including Bilharzia (907 from Nutritional Survey)	360 907		Bacteriological exam.	5
			C.S.F.	Cells	2
	Culture	91		Protein	2
	Chemistry	310		Glucose	2
Pus	Microscopy	58		Globulin	2
					2

	Culture	58
Swabs		
Vaginal	Micro & Culture	9
Ear	Culture	6
Eye	Culture	3
Throat	Culture	64
Nasal	Culture	2
Urethral	Culture	2
Rectal	Culture	10

Cholorides	2
Culture Bact.	2
C	
Culture T.B.	2
GRAND TOTAL	4562

2. MALARIA

1. CLIMATIC CONDITIONS

Due to heavy rains in the bushveld areas, especially during February extensive A.gambiae breeding took place.

The combination of A.gambiae and scattered parasite carriers subsequentl resulted in a widespread outbreak of Malaria.

The meteorological records from various stations are reflected in the following table:

Meteorological Report

Month	Manzini - Alt. 2000'			Stegi - Alt. 2,200'			Big Bend - Alt. 500'			Gollel - Alt. 600'			Mhlume - Alt. 950'		
		Temp. °C			Temp. °C			Temp. °C			Temp. °C			Temp. °C	
	Rainfall in mm.	Max.	Min.	Rainfall in mm.	Max.	Min.	Rainfall in mm.	Max.	Min.	Rainfall in mm.	Max.	Min.	Rainfall in mm.	Max.	Min.
July 1966	2.5	30.0	4.0	0.00	30.0	4.0	0.0	28.5	12.0	0.0	Figures not available		-	32.0	4.0
August	32.0	30.7	5.0	70.0	28.2	6.2	34.9	38.0	8.0	14.0			32.0	35.0	4.0
September	58.0	35.0	10.5	32.0	33.2	10.0	7.0	37.6	6.0	8.0			16.5	36.0	7.0
October,	37.7	35.0	10.5	59.0	33.0	9.0	40.5	38.0	9.3	26.0			47.2	37.0	9.0
November	57.8	36.0	13.5	42.0	34.2	11.2	75.9	38.9	13.0	109.0			31.8	37.0	13.0
December	124.0	35.5	13.5	110.0	35.0	11.2	96.2	37.3	15.3	45.0			67.8	35.0	15.0
January 1967	131.0	36.0	12.0	57.0	36.2	12.8	40.5	39.0	14.5	92.4	39.5	17.0	108.2	37.0	16.0
February	287.2	31.0	14.5	381.3	34.0	12.0	230.6	33.8	15.9	177.5	35.0	16.0	236.5	34.0	15.0
March	116.5	32.0	12.0	40.5	31.0	13.8	92.6	29.5	13.5	49.5	36.5	15.0	113.0	34.0	15.0
April	170.5	30.5	11.0	131.5	30.0	10.0	80.7	32.4	9.3	68.5	34.5	15.0	95.0	32.0	11.0
May	17.0	30.0	7.8	41.5	29.2	7.2	24.8	30.5	5.9	13.5	32.0	10.0	19.1	30.0	4.0
June	7.0	30.0	4.5	4.0	31.0	6.2	1.5	31.6	0.4	0.0	31.5	5.5	11.7	31.0	4.0

2. MEETINGS:

The Annual Staff Meeting was held at Manzini during the month of August when individual problems were discussed, a lecture on Malaria given and the staff informed of their duties for the new Malaria season.

Further meetings with chiefs, indunas and others to explain the aims and object of our work were held at the following places: Shoba, Sipofaneni, Tulwane and Herefords.

3. POPULATION AND HUT COUNT. According to the Territorial Census carried out in May, 1966, population figures were approximately as follows:

Maintenance Phase	51,000
Consolidation	144,000
Total	195,000

The number of huts in the portion of the consolidation area where regular surveillance was carried out, totalled 44,593.

4. MALARIA CONTROL MEASURES:

(a) RESIDUAL SPRAYING with Benzine Hexachloride 12% Gamma Isomer Wettable Powder was carried out as follows:

Date	Place	No. of Huts Sprayed
7-9.11.66 + 20-30.12.66	Sivunga	363
9-11 + 15-16.11.66	Lesters	330
10-11.11.66 + 14.12.66	Bar. J. Ranch	143
22-25.11.66 + 30.11.66	Border Gate	265
23.11.66	Canterbury, Nosko	94
29.11.66	Nyakato	76
23-25.11.66	Mafukwini (S. Border)	173
29-30.11.66	Volinde	140
6-7.12-66	Tshaneni (Border Gate)	211
13.12.66	Mfokeni (Comp. Big Bend Sugar)	8
13-22.12.66	Herefords	480
12.12.66	Nyetane Comp. Ubombo Ranches	3
29.12.66	Nyonyane (Tarbet)	40
January 1967	Big Bend Ranches, Picardia and "Mfula"	464
January	"Poortzicht" and Mapayipini Ubombo Ranches	527
January	River Bank Sugar Co., Big Bend	27
January	Vuvulane	82
January	Mhlume Secs. 2 and 7	246
January	Mapobeni P/26	68
January	Ngcamini P/26 and Lubhuku O/26-28	296
January	Manzingwenya and Mkayabovu, Big Bend	75
January	Sivungu V/35	34
February	Mabanda M/54	181
February	Canterbury, Nsoko Planters and Swaziland Citrus - Nsoko	258
February	Mlaula and Piva Ranch	194
March	Guquka 1/37, J/38-39, K/39, L/38	191
March	Nyetane S/29, T/30-31	230
March	Sigcaweni L/30, N/30-32	247
March	Mabiya J/11, K/11-13 and Nkambeni J/11-12, 1/11	841
March	Bar J. Ranch and Vokovane, Big Bend	70
March	Ngomane P/13-14, O/14, Q/14-16, R/15	691
April	Sidwashini H/10	134
April	Vokovane J/33, L/41, M/40	137
April	Nyakato H/10-11	126
April	Tshaneni (B. Gate, Mzungwane, Thompson-Crammond, Sand Riverdam, Tunzini)	236
April/May	Nkambeni and Mlaula 1/9-11, J/9-11	583

Total No. Of Huts Sprayed	8,263
Lbs. B.H.C. used	2,534
No. of Huts per lb.	3.26

(b) Larval Control In order to control A.gambiae breeding, oiling was carried out in the following places:

Donsamehlo Compound, Ubombo Ranches (by the company)
Nyetane " " " "
Sand River Dam Area, Tshaneni.

(c) Drug Prophylaxis with Darachlor was instituted in the following places:

Mpofu
Border Gate
Tshaneni
Mhlume
Tambankulu
Big Bend Sugar Estates and Bar J. Ranches
Big Bend
Ubombo Ranches
Mlaula
Thambuti Estates
Sidvokodvo
Vuvulane - 60 Acre Settlers
Volinde - European Farmers
Nyonyane - "Tarbet Farm"

(d) Surveillance Operations were continued by the field staff who were concerned mainly with routine blood taking, case finding and hut space spraying.

5. PARASITOLOGY Blood slides taken during the year were examined at the Health Office, Manzini by four microscopists and the following results were recorded:

Source	Negative	Positive	Total	Species
Indigenous	23,568	410	23,978	
Immigrants	3,591	88	3,679	
Cryptic		22	22	
Combined	27,169	520	27,679	
				P. Falciparum: 498
				" Malariae 11
				" Falcip./Mal. 11

Annual Parasite Incidence 2.2
Annual Blood Examination rate 14.2

Immigrants originated from the following sources:

Source	Negative	Positive	Total	% Positive
Mocambique	1210	64	1274	5.
Zululand	1483	10	1493	0.67
Transvaal	889	14	903	1.55
Others	9	0	9	0
	3591	88	3679	2.4

6. ENTOMOLOGY

(a) Hut Space Spraying The results of this work carried out by the field staff were as follows:

No. of Huts tested	22,380
" " A.gambiae found	563
" " A.funestus Group found	262
" " Other Anophelines found	357

(b) Larval Searching Results of identifications were as follows:

A.gambiae from Sipofaneni, Madubeni, Ndobandoba Big Bend, Ubombo Ranches, Mabiya, Sand River Dam Area, Tshaneni, Sidwashini, Mpofu, A.funestus type from Sonyama, Mahlaleni, Emzaceni, Sivunga, Lesters, Bar J. Ranch Big Bend, "Tarbet" Nyonyane, Croydon Area, Herefords, Ubombo Ranches, Other Anophelines found included A.rivolorum var. confusus, A.leesoni, A.nili, A.maculipalpis A.coustani, A.squamosus, A.pretoriensis, A.marshalli, A.rufipes, A.listeri.

(c) Investigations to determine possible Exophily of Vectors

The following investigations were undertaken in areas where there was reason to suspect that outside biting and resting may have been taking place:-

Date.../

Date	Area	No. of Cases of Ind. Malaria	Results
8-11.11.66	Mpofu 1/8	1 : Man-baited net outside	0
8-9.11.66	" "	Man outside directly off himself	0
8-9.11.66	" "	Cattle Kraal	1 A.gambiae ♀
9-11.11.66	" "	4 Window Traps	0
10-11.11.67	" "	Calf-baited net	0
8.11.66	" "	Larval searching - Mpofu river	: 16 A.gambiae 19 A.leesoni 1 A.rivolorum 1 A.listeri
8.11.66	" "	" " " "	1 A.coustani 6 A.pretoriensis
8.11.66	" "	Space spraying - 10 huts	0

Pit Shelters revealed the following:

Date	Area	Anophelines found
7th October, 1966	Gundwini	0
12th October, 1966	Tulwane	0
28th October, 1966	Bar J. Ranch Big Bend	1 A.marshalli ♀ 2 A.pretoriensis ♀
16th November, 1966	Herefords	3 A.funestus GR ♀
30th November, 1966	Herefords	5 A. " " ♀ 5 A. marshalli 1 A.pretoriensis 1 A.rufipes
17th November, 1966	Nyakato	2 A. " " ♀
29th November, 1966	Nyakato	5 A. " " ♀ 1 A.coustani ♀
23rd November, 1966	Langa	0

(d) Investigations to determine possible Physiological Resistance to B.H.C.

Two and a half months after residual spraying at "CANTERBURY", NSOKO with B.H.C., space spraying of 14 huts produced 12 A.gambiae, 201 A.listeri and 1 A.rufipes. Investigation subsequently proved that the Anopheline population were not resistance to B.H.C. but that the B.H.C. was probably at fault (analysis report from K.O.P. still awaited).

The following was done to prove the susceptibility of A.gambiae to B.H.C.

7th - 8th February, 1967	1 window trap in unsprayed hut	5 A.gambiae	
7th - 8th February, 1967	2 " traps in unsprayed huts	0 A.gambiae	
7th - 8th February, 1967	2 " " " sprayed huts	0 A.gambiae	(sprayed with B.H.C. 7th February, 1967)
8th - 10th February, 1967	1 " trap in sprayed hut	1 A.gambiae	(dead and unfed) sprayed with B.H.C.
8th - 10th February, 1967	1 " " " " "	1 A.gambiae	(" " ") 8th February, 1967.
8th - 10th February, 1967	3 " traps in sprayed huts	0 A.gambiae	
10th February, 1967	4 sprayed huts space sprayed	0 A.gambiae	

N.B. The paucity of A.gambiae could be attributed to nocturnal rainfall.

(e) Precipitin Tests:

Precipitin Tests were carried out at the Health Office, Manzini with Anti-human Rabbit Precipitating sera obtained from Messrs. Burroughs Wellcome & Co. Results were as follows:

PRECIPITIN TESTS:

Precipitin tests carried out at the Health Office, Manzini, were as follows:-

A.gambiae

DATE	LOCALITY	NO. TESTED	NO + VE FOR MAN	MAN BITING RATE	AV. HUT AVDENSITY
7th, 23rd March, 1967	Lesters E/6	1	1	100%	0.4
4th January, 1967	S Unfula Planters Big Bend	2	1	50%	0.4
3rd & 17th January, 1967	Sonyama, F/2 - 3	1	0	0%	0.16
4th & 6th January, 1967	Lubhuku, O/26 & 28	2	1	50%	0.2
5th January, 1967	Mhlume Section 2	2	2	100%	0.66
9th January, & 9th March, 1967	Nkabeni I/12, I/11, J/11	8	3	37%	0.4
10th & 24th January, 1967	Mapopeni P/36	3	1	33%	0.06
10th & 12th January, "	Sivunga V/35-36	1	0	0%	0.05
12th January, 1967	"River Bank", Big Bend	5	5	100%	2.5
19th January, & 10th & 23rd March, 1967	Sigcaweni N/30 - 32	13	4	31%	0.6
20th January, 1967	Sipofaneni L/34	1	1	100%	0.2
24th January, & 1st February, 1967	Mtonga J/16	2	0	0%	0.09
25th & 31st Jan., 7th, 9th, 10th, 16th, March	Ngomane O/18-19, P/17, Q/15	13	0	0%	0.35
26th January, 1967	Emzaceni G/13				
31st January, 1967	Mkayabovu, Big Bend	2	0	0%	0.3
1st February, 1967	S. Swazil. Citrus Nsoko	1	1	100%	0.5
7th February, 1967	Mlaula. V/17	3	0	0%	0.14
7th " "	Piva Ranch V/14	1	0	0%	0.14
16th " "	Bar J. Ranch, Big Bend	2	2	100%	0.8
21st " & 2nd March, '67	Guquka J/38, L/38	5	3	60%	0.24
10th & 17th Mar.1967	Mpofu H. and I/8	2	1	50%	0.3
27th Feb. 7th March 1967	Mabiya K/11 - 12	11	5	45%	1.0
28th Feb. 1967	Msinda I/14	2	0	0%	0.4
21st Feb. 1967	Nyetane S/29	1	1	100%	0.2
1st & 22nd March, 1967	Mpolonjeni R/29 - 30	2	0	0%	0.2
8 & 16th, 22nd Mar. 1967	Madubeni L/41. N/40	2	1	50%	0.04
7th & 10th Mar. 1967	Shoba Q/30	5	0	0%	0.7
8th March, 1967	Lifaland R/16	4	1	25%	0.9
16th March, 1967	Manduma J/33	1	1	100%	0.3
17th March, 1967	Magomba P/29	1	0	0%	0.2

A.Funestus Group

NO. TESTED	NO + VE FOR MAN	MAN BITING RATE	AV. HUT DENSITY
1	0	0%	0.06
6	0	0%	7 7
1	0	0%	0.3
1	0	0%	0.1
2	0	0%	0.2

(e) PRECIPITIN TESTS:-

				A.gambiae	
DATE	LOCALITY	NO. TESTED	NO. + VE FOR MAN	MAN BITING RATE	AV. HUT DENSITY
7th April, 1966	Mpofu H/8	1	0	0%	0
7th April, 1966	Mpofu 1/8	2	0	0%	0
14th April, 1966	Ngomane P/13	2	0	0%	0.5
15th " "	Sigcaweni	2	1	50%	0.1
19th " "	Mkofeni Big Bend	6	3	50%	1.2
19th " "	Manzingwenya Big Bend	8	6	75%	3.75
27th " "	Sivunga V/38	5	5	100%	3.3
2nd June, 1966	Nyakato 1/10				
7th " "	Sihoya K/8				
7th " "	Tulwane J/28				
7th " "	Gundwini E/30				
25th October, 1966	Bar J. Ranch Big Bend				
2nd November, 1966	Mhlume Section 2	2	2	100%	0.4
9th " "	Mpofu 1/8	1	0	0%	0
15th " "	Maphathinduku Q/24	1	0	0%	0.2
16th " "	Herefords F/6				
18th " "	Mafukwini M/56	2	2	100%	0.1
23rd " "	Horo E/2				
24th " "	Sonyama F/3	1	0	0%	0.06
24th " "	Sonyama F/3				
24th " "	Bar J. Ranch Big Bend				
29th " "	Nyakato I/10				
30th " "	Herefords F/6				
2nd December, 1966	Sidokodvo, Mliba	11	0	0%	1.8
1st " "	Sonyama F/3				
5th " "	Border Gate Compound	6	6	100%	1.0
6th " "	Herefords F/6				
6th " "	Herefords F/6				
7th " "	"Tarbet", Nyonyane				
20th " "	"Mapayipini" Mhlume	1	1	100%	0.17
28th " "	Nkambeni I/12	3	0	0%	1.0
30th " "	Mhlume Section 1	1	1	100%	0.33

N.B. The April-June specimens were examined in October and will serve as a guide for this present transmission season.

A.funestus Group

NO. TESTED	NO. + VE FOR MAN	MAN BITING RATE	AV. HUT DENSITY	REMARKS
				Ex pit shelter
				Ex pit shelter
6	0	0%	2	A. funestus type larvae found
1	0	0%	0.5	
3	0	0%	0	Ex pit shelter
1	0	0%	0	Ex pit shelter
2	0	0%	0.5	A.funestus type larvae found
				Ex cattle kraal
2	0	0%	0	Ex pit shelter - A.funestus type larvae found
1	0	0%	0.06	
19	0	0%	2.6	A.funestus type larvae **found**
1	0	0%	0.2	A.funestus type larvae found
5	0	0%	0	Ex pit shelter - A.funestus type larvae found
2	1	50%	0	Ex pit shelter - A.funestus type larvae found
3	0	0%	0.4	A.funestus type larvae found
6	0	0%	0	Ex pit shelter - A.funestus type larvae found.
3	0	0%	0.2	- A.funestus type larvae found.
1	0	0%	0.1	- A. funestus type larvae found.

3. POLIOMYELITIS

Oral anti polio vaccine.

	1st	2nd	3rd	Booster
Health Office Manzini	180	130	85	22
Red Cross Clinic Manzini	289	177	108	-
	469	307	193	22

4. DIPHTHERIA

Triple Vaccine (D.P.T.)

	1st	2nd	3rd	Booster
Health Office, Manzini	49	38	26	1
Red Cross Clinic, Manzini	284	174	103	-
	333	212	129	1

	1st	2nd	3rd	Booster
Diphtheria Tetanus Vaccine	8	6	2	3

26 cases were reported with 3 deaths.

5. SMALLPOX

Vaccinations against smallpox

		Primary	Re-vaccination	Total
Health Office, Manzini	(a) Field	11128	14658	25786
	(b) Office	376	3264	3640
Red Cross Clinic, Manzini		12	-	12
		11516	17922	29438
Health Centres				1265
Government and Mission Hospitals				4046
			Total	34749

25 cases occured during the year with 0 deaths.

6. VENEREAL DISEASE

Figures for attendance at Government and Mission Hospitals and clinics are appended:

	Syphilis	Gonorrhea
1963	2419	3889
1964	8590	13717
1965	11915	14432
1966	9242	13327
1967	8532	12107

7./...........

7. LEPROSY

The work of the hospital and settlement has been carried on routinely; however, a few of the more interesting phases of the work we will briefly mention. The patients' care falls into four categories: Medical, Occupational therapy, Educational and Spiritual. Taking these in order:

MEDICAL: There has been no appreciable change in the drugs used. We express appreciation to the government for supplying the leprology medicines. We have noted some interesting and hopeful surgical possibilities in a number of the patients' deformed hands, feet and the pressure sores.

OCCUPATIONAL THERAPY: According to their several abilities and strength, the patients have assisted to man the following industries: the vegetable farm has almost completely supplied these needs. The Leghorn chickens not only provides some lighter work but also needed protein through the eggs produced. The cattle, 83, have also provided outdoor work and daily milk which they appreciate. Three oxen have been sold but a good many more need to be culled out of the herd. The Angora goats provide wool which they, the patients shear, clean, card, dye and spin. From this high grade wool they make blankets and garments.

EDUCATIONAL: One of the women patients, Miss T. Fakude, continues to teach her little class of 8 in grades one and two. The Umbuluzi Housecraft Centre has been most helpful in teaching the patients to do ourdoor open fire cooking, handicrafts, crochet, knitting, embroidery, sewing, etc. This has been done in conjunction with their own school training program.

SPIRITUAL: Several churches have contributed to the spiritual life of the community. The South African General Mission, the Church of England, the Methodist Church and the Church of the Nazarene have all provided inspiration and encouragement to the patients who often are inclined to be depressed over their lot.

The annual outdoor nativity play at Christmas is proving of considerable interest to friends outside the Colony. Mention should be made of Mr. C.B. Pretious, Miss Elizabeth Cole and Mrs. K. Stark who assisted the patients in the direction and production.

For some time OXFAM has given most generous assistance. You will be interested in noting our reason for saying this. Through their grant the following have been supplied:

BUILDINGS: i) married worker's home, office and storeroom.
ii) two poultry houses for 192 hens.
iii) one garage and shelter for tractor and agricultural implements etc.

Battery cages for the 192 hens.
1 single furrow plough
1 single furrow planter
1 Massey-Ferguson Tractor
1 tractor plough (double furrow)
1 tractor planter (double furrow)
1 tractor cultivator
1 tractor 3-ton tipping trailer wagon
Fencing materials
Gardening implements and tools
Pullets
Angora goats.

This grant finished this year.

The staff and patients alike have appreciated the personal interest of many people as well as several organizations. A few are: Sir Francis and Lady Lloyd, Her Majesty's Commissioner for Swaziland, Dr. and Mrs. C. Runciman, Mr. A.Z. Khumalo, Mr. and Mrs. D. Day, and many others. The children of the Methodist and Anglican churches helped to provide sweets and money for the patients at Easter and Christmas. The Mbabane Rotary Anns kindly supplied a pair of crutches, fruit and other gifts.

UMBULUZI LEPROSY HOSPITAL

The more frequent visits of Mr. C.B. Pretious of the Red Cross has meant much to the patients.

For the close co-operation of the Department of Agriculture we are most grateful. They have assisted in the work of the many gardens as well as the farm animals.

Sister Mary Bagley ably acted as Sister-in-charge of the hospital until the return of Miss Elizabeth Cole. It was with joy that we welcomed in September Miss Cole from her overseas leave.

DR. DAVID HYND was the resident doctor for the past four years. In june Dr. and Mrs. Hynd retired from this active service although the doctor continued to supervise the Oxfam scheme until the end of the year. It is with sincere appreciation that we acknowledge their help. We pray that Dr. and Mrs. Hynd may have many happy years ahead to enjoy their more leisurely years of retirement. Our congratulations upon their Golden Wedding Anniversary, in January, 1968.

NEEDS: There is still need for walkers to assist the badly crippled; also, instruments for the dressing tray. Although one pair of crutches was donated during the year four more are needed. Footwear is badly needed to help prevent the traumatic ulcers of the feet.

Mission to Lepers: For many years this Mission has sent an annual grant to assist in carrying on this work at Umbuluzi Leprosy Hospital. This is part of the life line and we are most grateful.

We submit the following annual statistics--

		MALE	FEMALE	CHILDREN	TOTAL
I.	Admissions:	10	5	5	20
	Readmissions	9	5	-	14
					34

II. Losses of Population:

	MALE	FEMALE	CHILDREN	TOTAL
Deaths	-	-	-	
Desertions	-	-	-	
Discharges (free of active disease)	9	5	8	22

III. Origin of Patients

Mankaiana	3
Manzini	9
Piggs Peak	4
Mbabane	14
Stegi	1
Hlatikulu	3
	34

IV. Classification of Diseases

	MALE	FEMALE	CHILDREN	TOTAL
Lepromatous	7	4	-	11
Neural	19	14	9	42
Borderline	2	1	-	3
				56

V. Average Age: 45 years.

VI. Proportion of Children to total admissions: Children 5
Adults 34
Percentage of children 14.7%

VII. Average Monthly Census

MALE	FEMALE	CHILDREN		TOTAL	1966
		M.	F.		
25	18	6	5	54	42.8

VIII. Total Number of Patients 31st December, 1967

MALE	FEMALE	CHILDREN	TOTAL	1966
28	19	9	56	44

Observations

It will be noted that the total number of patients have increased by 12 this year. This is a little higher increase than usual but may be accounted for by the improved doctor coverage to the general Swazi population.

Also there are still some outstanding needs related to patient care, This is in the form of better footwear, more crutches, etc.

The added stimulus of Oxfam's grants and interest has made it possible to better the patient's general health by more successful farming methods. The diet has been more varied and certainly adequate.

The total picture has been an improvement we feel because of the close co-operation of so many interested people and we are most grateful to all.

8. BILHARZIA

1. Bilharzia Control Pilot Project as Phonjwana

Malacology	Dam	Stream
11th July, 1967	0 Physopsis 2 B. forskalii	0 Physopsis 0 B. forskalii
24th August, 1967	0 Physopsis 13 B. forskalii	0 Physopsis 16 B. forskalii
6th October, 1967	0 Physopsis 17 B. forskalii	0 Physopsis 11 B. forskalii
14th November, 1967	0 Physopsis 12 B. forskalii	0 Physopsis 4 B. forskalii

Parasitology

Urines of the local school children 6 - 9 years of age were examined in order to assess progress which is reflected in the following results:

Date	Age Group	No. Examined
29th April, 1959	6 - 9 years	38
		Molluscicciding begun March 1961
13th March, 1961	6 - 9 years	46
		Last time physopsis found, December, 1963
11th July, 1967	6 - 9 years	60

No. + Ve	% +ve	
13	34.2)	
12	26.0)	S. Haematobium
7	11.6)	

2. Bilharzia Control Pilot Project at Nomahasha

Malacology

5.1.67	Resurvey of dam near Police Station	0 physopsis 0 biomphalaria 0. B. tropicus
5.1.67	Resurvey of other dams and pools	0 physopsis 0 biomphalaria 169 B. tropicus
5.1.67	Resurvey of swamp	6 physopsis 0 biomphalaria 0 B. tropicus
5.1.67	3rd application of molluscicide (Balluscide) to swamp.	
13.7.67	Resurvey of dam near Police station:	0 physopsis 0 B. forskalii
13.7.67	Resurvey of swamp.	+ physopsis 0 B. forskalii
25.8.67	Resurvey of dam near Police Station	0. physopsis 1 B. forskalii
25.8.67	Resurvey of swamp	10 physopsis 0 B. forskalii

8.11.67	Dam near Police Station	0 Snails
7.12.67	Dam near Police Station	0 Snails

Application of Bayluscide and permission given for children to swim again

Parasitology

Urines and stool of the local school children 5 - 9 years of age were examined in order to obtain base line date for yearly comparative incidence surveys. The results were as follows:

S. haematobium

Date	Age Group	No. Examined	No. +ve	% +ve
14.7.67	5 - 9 years	60	25	41.7

S. mansoni

Date	Age Group	No. Examined	No. +ve	% +ve
14.7.67	5 - 9 years	60	8	13.3

The progress of schistosomiasis in this area can be observed from two previous surveys which gave the following results.

S. haematobium

Date	Age Group	No. Examined	No. +ve	% +ve
27.10.65	6 - 8 years	40	10	25.0
14.4.59	6 - 9 years	50	6	12.0

S. mansoni

Date	Age Group	No. Examined	No. +ve	% +ve
27.10.65	6 - 8 years	40	6	15.0
14.4.59	6 - 9 years	50	0	0.0

Molluscciding only began in July, 1966.

3. Bilharzia Control Pilot Project at Madonsa, Manzini District

A pilot scheme was started in this area with a view to eventually extending the control to the whole of the Mzimnene River Catchment Area and so reducing the incidence of or perhaps even eradicating S. haematobium from Manzini and its immediate surrounding area.

The following base line data was obtained.

Parasitology

Madonsa Pilot Project Area

S. haematobium

Dates	Age Group	No. examined	No. +ve	% +ve
19.7.67 and 10.8.67	Pre-school children 2 - 7 years	36	23	63.9
	School children 6 - 7 years	14	14	100.0
27-28.7.67	Pre-School children 2 - 6 years	74	16	21.6
9.8.67	School children 5 - 7 years	60	24	40.0

Malacology

Logoba Control Area

	Physopsis				Shedding Mammalian Cercariae
	<3 mm	>3 mm	>6 mm	Total	
25.7.61	0	7	58	65	0
25.9.67	0	0	52(1)	52(1)	0
9.11.67	0	4	52	56	7
13.12.67	0	5	69	74	2

() = Dead Snails

Madonsa Pilot Project Area

10.7.67 and 12.7.67	35 (1) Physopsis found in 23 points in the Madonsa Stream and its tributaries, 2 of which infected with mammalian cercariae found by liver crush.
18.9.67	20 Physopsis found in 23 points as before, 1 of which infected with mammalian cercariae as before.
19.9.67	Application of Bayluscide.
20.9.67	5 (5) Physopsis found in 23 points. (5 Physopsis found in pool which was unsprayed but subsequently sprayed the next day. ( ) = Dead Snails.
30.10.67	3 Physopsis found in 2 out of 23 points.
3.11.67	Application of Bayluscide to 2 points.
10.11.67	2 Physopsis found in 1 out of 23 points.
13.11.67	Application of Bayluscide to 1 point.
12.12.67	25 Physopsis found in 2 out of 23 points.
13.12.67	Application of Bayluscide to 2 points.

4. Bilharzia Control: Evusweni, Hhohho District

Snail Control appears to have been effective in reducing the incidence of bilharzia in the area as the following figures will show:-

Parasitology

Evusweni Nazarene School

Date	Age Group	No. Examined	No. +ve	% +ve
12.10.62	6 - 8 years	14	9	64.3
	6 - 10 years	25	19	76.0
	11 - 20 years	54	32	59.3
	6 - 20 years	79	51	64.5
25.10.67	6-8 years	27	0	0
	6 - 10 years	48	10	20.8
	11 - 20 years	37	17	45.9
	6 - 20 years	85	27	31.8

Malacology

12.10.62	Stream near School	2 physopsis
6. 5.63	Stream near school	22 physopsis
7. 5.63	Sulphation of Stream	
23. 7.65	Stream near school	13 dead physopsis
	Stream near school	0 physopsis
25.10.67	Stream near school	0 physopsis

5/..........

5. Bilharzia Control; Bulandeni, Hhohho District

At the request of the Head Teacher of the Bulandeni Nazarene School, a survey was carried out on 7th November, 1967, and the following facts discovered.

Parasitology

All the pupils at the Bulandeni Nazarene School, viz. 52, were given one urine examination on the 7th November, and 37 had S. haematobium ova = 71.5%

Malacology

Pool in Mbabane Stream:	0 physopsis 25 Lymnaea - this was the only water body with which all children appeared to have made contact.
4 dams:	2 Physopsis and 1 Lymnaea in small portion of 1 dam - very few school children made contact with this water.
Pool from which school water supply obtained:	0 Snails.

The above-mentioned 2 pools were again examined on the 14th December, 1967, and still no physopsis could be found.

Further surveys, it is hoped, will reveal the source of infection.

6. Snail Control Pilot Project - "Thandelizwa", Manzini District

	Main Stream	Tributary
Resurvey 5th May, 1967	34 Physopsis 4 Lymnaea 2 B. Forskalii	1 Lymnaea 2 B. Forskalii

Previous survey 4th November, 1966 revealed no Physopsis. This break of 6 months between surveys was due to the staff being engaged on urgent Malaria work. Surveys were subsequently discontinued as sufficient information had been obtained and is summarised as follows:

This was an attempt to control snails in a stream approximately 2,000 yards long with it's tributory approximately 1,000 years long.

Mollusciciding was done by means of a saturated solution of $CuSO_4$ (100 lbs $CuSO_4$ to 35 gallons of water) which was applied to the water in sufficient quantities to give it a distinct blue colour. Sulphation was started at the lowest points and applied evenly, gradually working up-stream to the sources of the streams. Surveys were done monthly.

Main Stream	Physopsis
Preliminary survey 11.7.61	84
Sulphation of stream 12.7.61	
After 5 months	1
Sulphation of stream 20.12.61	
After $3\frac{1}{4}$ years	13 (in one pool)
Sulphation of 1 pool 5.4.65	
Resurvey of 1 pool 5.4.65	66 (all dead)
Resurveys were then done monthly until 31.12.65, then again on 30.9.66, 4.11.66 and finally again on 5.5.67 when the following were found (i.e. after 2 and 1/12 years)	34 (in one pool)

Tributary/.............

Tributary	Physopsis
Preliminary survey 4.10.61	58
Sulphation of stream 4.10.61	
After 4 months	11
Sulphation of stream 7.2.62	
After 1 and 1/3 years	14
After 10 months	7
Sulphation of 4 pools 9.4.64	
Resurveys were done monthly until 31.12.65 then again on 30.9.66 4.11.66, and finally 5.5.67 when still no Physopsis were found (i.e. after 3 and 1/12 years)	

7. Proposed Snail Control Pilot Project: Lowveld Experimental Station, Big Bend

As a result of a request from the Lowveld Experimental Station, Big Bend, the bilharzia situation was investigated and it was concluded that this was a suitably sized irrigation system for a pilot project.

Further detailed work revealed the following:

Dam No. 1: 6 Biomphalaria, 1 Lymnaea, 9 B. tropicus (few minutes searching). Irrigation from Dam No. 1 by means of underground pipes with open cement sumps at various points. A number of these sumps were searched and only 2 Biomphalaria were found in a sump close to the dam. In addition, 27 B. tropicus were found in all.

Dam No. 2: 100 Biomphalaria, 37 B. tropicus (few minutes searching). Sumps (as before) 0 Biomphalaria, 38 B. tropicus.

It must be concluded that this is not an ideal situation for a Pilot project because of the paucity of Biomphalaria in the irrigation canals and the absence of Physopsis. The situation here may be further proof of the hypothesis as set out in Section 9 by Dr. Manson-Bahr.

8. Snail Control: Sand River Dam: S.I.S., Tshaneni

Further attempts were made to control the club house foreshore of this dam with "Bayluscicide" applied from a boat by means of a motorised pump. This merely served to reduce the number of Biomphalaria and Physopsis as the following figures will show:

	Northern Sector		Southern Sector	
	Phys.	Biomph.	Phys.	Biomph.
28.9.67	123	74	53	8
Application of Bayluscicide.				
29.9.67	16	9	14	13

A large scale survey of the dam to get some idea of the cercarial shedding infectivity rate during the middle of September produced 1360 Physopsis and 600 Biomphalaria of which 2 Physopsis were shedding mammalian cercariae = C.S.I.R. for physopsis of 0.15%.

Results/............

Results of control with "Frescon" 16.5% Emulsifiable Concentrate were as follows:

	Northern Sector (175 yards)		Southern Sector (175 yards)	
	Biomphalaria	Physopsis	Biomphalaria	Physopsis
11.10.67	26	73	5	8
11.10.67	Application of Frescon by Knapsack sprayer to strip 24 feet wide.			
11.10.67	0(13)	0(39)	Not surveyed.	
12.10.67	10(31)	24(30)	2(6)	12(6)
13.10.67	4(7)	10(21)	3(6)	5(8)

Further attempts were made as follows:

	Northern Sector (100 yards)		Southern Sector (100 yards)	
	Biomphalaria	Physopsis	Biomphalaria	Physopsis
1.11.67	11	17(3)	2	1
1.11.67	Application of Frescon by motorised sprayer from boat and shore to strip 100 feet wide using much higher concentrations			
1.11.67	0(17)	0(24)	0(3)	0(9)
2.11.67	8(14)	16(30)	0(6)	2(6)
2.11.67	Application of Frescon by knapsack sprayer to remaining pockets.			
3.11.67	0(7)	0(5)	0(2)	3(4)
3.11.67	Application of Frescon by knapsack sprayer to remaining pockets.			

It would appear from these results that the rapid repopulation could be attributed to wave action resulting in insufficient time/concentration of molluscicide and re-introduction of snails from across the dam. Perhaps the "Frescon Bait" wojld be more successful.

9. Biological Control of Molluscan Intermediate Hosts

In the lecture given by Mr. G. Mandahl-Barth in Cairo on the 23rd November, 1965 entitled "A Possible Biological Mehtod of Controlling Bilharzia Snails", he states inter alia, "The closer 2 species are related ecologically, the harder the competition between them will be if they are forced to live together in the same habitat".

Working on this principle of the "survival of the fittest", he found that B. tropicus by virtue of its more rapid reproduction was able to replace B. truncatus (the Egyptian intermediate host of S. haematobium) completely in a year in the Danish Bilharzia Laboratory.

A similar relationship between B. tropicus and B.(physopsis) globusus appears to exist in this country, so with this in view, the following experiments were carried out:-

Laboratory: These were unsuccessful as high mortalities of both species occurred.

Sand River Dam, Tshaneni: B. tropicus from Mhlume were introduced into approximately 27 feet of shoreline where B. Physopsis and Biomphalaria occurred on 28.9.67.

Eight weeks later, none of the B. tropicus could be found whilst 30 Biomphalaria and 7 B. Physopsis were found. In the adjacent "control area", 11 Biomphalaria and 14 B. Physopsis were found.

Swamp Nomahasha: Approximately 24 B. tropicus from nearby dams were introduced into a swamp where 5 B. Physopsis were found on 10.10.67.

Two months later only 1 live Physopsis but 60 B. Physopsis were found.

Pool at/.............

Pool at Olwandle: This is a small pool near the Mzimnene River at Olwandle close to Ngwane Park, a few miles from Manzini. The principal vegetation occurring in this pool is an emergent weed of the Jussieva species and B. Physopsis occur naturally.

On the 29th November, 1967, approximately 300 B. tropicus were introduced into this pool where 42 B. physopsis were collected and replaced.

By the 22nd December, 1967, more or less 2/3rds of the pool had dried up but in the remaining portion only 1 live and 4 dead B. tropicus were found, whilst 69 live and 1 dead B. physopsis were found. The sizes of the physopsis indicated recent breeding.

In the dried up portion of the pool on the mud were found 6 dead B tropicus and 2 dead B. physopsis.

The tentative conclusion that must be drawn from these 3 experiments is that B. tropicus cannot be introduced into a habitat where they do not naturally occur.

In the case of the Sand River Dam further support is lent to this conclusion by the fact that last year in the early stages of the dam, B. tropicus were occasionally found in small numbers, but later did not appear to occur any more.

10. Parasitological Investigations - Sprengell's Farm, Manzini

In view of the incidence of S. mattheei in cattle slaughtered at the Manzini Abattoir and the fact that effluent from this abattoir used to be discharged into the Mzimnene River below, it was considered reasonable to suppose that the people using the water downstream would be to some extent infested with this parasite.

Furthermore the presence of an infected Biomphalaria Pfeifferri in this locality suggested the possibility of S. mansoni transmission in Manzini.

It was therefore decided to examine urine and stools from children at Sprengell's farm close by.

The results were as follows:-

Date	Age Group	No. examined	No. +ve	% +ve
		S. mattheei		
28.8.67	2 - 14 years	25 urines	3	12
		24 stools	1	4.2
		S. mansoni		
28.8.67	2 - 14 years	24	1	4.2

S. mattheei The 3 with S. mattheei in their urines had 6, 17 and 10 ova and all had S. haematobium in addition, with ova in excess of a hundred.

The 1 with S. mattheei in her stool had 2 ova in a small piece of stool as big as a pea prepared by the M.F. concentration technique. She also had S. haematobium with ova in excess of a hundred.

S. mansoni It was established beyond a doubt that the one person with S. manzoni was infected at Big Bend.

11/............

11. Miscellaneous Surveys

Date	Place	Results
31.8.67	Mbekelweni, Nhlanhleni - Prince Magongo-Stream and furrow.	19 out of 22 children 1 - 15 years old +ve for S. haemat. = 86.4% Physopsis found in stream and furrow. Advice given on water treatment.
22.9.67	Swaziland Spa, Ezulwini Hot Springs; Malagwane, Mr. Aaron - dam and stream; Pine Valley; Black Umbeluzi River.	No snails. No snails. 5 Gyraulus in Black Umbeluzi River near Mission Falls. Area surveyed between lower falls to approximately 100 yards above Mission Falls.
22.9.67	Mbabane - Drew's Dam	72 Biomphalaria and 64 Physopsis from Drew's Dam were not shedding any mammalian cercariae. High mortality amongst Biomphalaria noted and Lymnae, 43 of which were found, appear to be coming back.
27.9.67	Havelock Mine, Tutuzi	No snails in sections of the Tutuzi and Nkomozane Rivers. Previous surveys of the Tutuzi on 29.6.64, 31.1.62 and 19.2.59 and of the Nkomozane on 31.1.62 and 19.2.59 likewise failed to produce snails.
24.11.67	Port. 17 Tung Oils J. de Jager	Approximately 200 yards of furrow ex Usutshwana River - 0 snails. Advice given on water purification.

12. Health Education A lecture on Bilharzia and Malaria was given to Student Nurses of the R.F.M. Hospital, Manzini.

13. W.H.O. Fellowship The month of April was spent observing operations on the Bilharzia Control Pilot Project, Alexandria, U.A.R.

14. Examinations of Urines and Stools at the Health Office, Manzini

424 urines and 26 stools were examined at the Health Office, Manzini, for Bilharziasis.

CHAPTER III

GOVERNMENT AND SUBSIDISED MISSION HOSPITALS AND CLINICS

1. Comparative tables for three years, setting out the staffing of Government hospitals, and the admissions, attendances, etc. at Government and Subsidised Mission Hospitals and clinics, follow:

11. Government and Subzidised Mission Hospitals and Clinics:

	1965	1966	1967	1965	1966	1967	1965	1966	1967	1965	1966	1967	1965	1966	1967	1965	1966	1967	1965	1966	1967
Hospital Staff	Mbabane			Hlatikulu			Mankaiana			Piggs Peak			Goedgegun			T.B. Matsapa			TOTALS		
Medical Officers	5	5	6	3	4	4	-	-	-	1	1	1	1	1	1				10	11	12
Matron	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-				2	2	2
Nursing Sisters	8	9	7	4	4		1	1	1	1	1	1	1	1	1				16	17	11
Pharmacists	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-					2	2
Radiographer	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-				1	1	1
Housekeeper	1	1	1	-	-	1	-	-	-	-	-	-	-	-	-				1	1	2
Medical Assistant	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-				1	1	1
Laboratory Assistant	2	2	2	1	1	1	-	-	-	-	-	1	-	-	-				3	3	3
Dispensers	2	2	3	2	2		-	-	-	-	-	-	-	-	-				4	4	5
Pupil Dispensers	-	-	-	4	4		-	-	-	-	-	-	-	-	-				4	4	1
Nurses	49	49	36	39	40		7	7		9	9		1	4					106	114	84
Out-Patient Attendants	3	3	3	-	-		1	1		-	-		-	-					4	4	4
Ambulance Drivers	2	3	3	2	2	3	1	1	1	1	1	1	1	1	1				8	9	9
Ward Orderlies	18	18	15	12	12		3	3		3	3		.2	2					40	41	32
BEDS																					
a) Full-paying	14	14	14	8	8	8	-	-	-	-	-	-	-	-	-				22	22	22
b) Part-paying	154	156	156	127	134	134	33	33	33	47	50	50	12	12	12				403	415	415
ADMISSIONS																					
a) Full-paying	500	510	620	116	90	94	-	-	-	-	-	-	-	-	-				616	600	714
b) Part-paying	4080	4519	6289	3668	4324	4862	1059	932	1488	993	1475	1538	122	635	1524				10082	12100	15701
DAILY AVERAGE NO. OF IN-PATIENTS																					
a) Full-paying	11.1	13.8	24.8	0.6	2.4	0.4	-	-	-	-	-	-	-	-	-				11.7	16.2	25.2
b) Part-paying	194.5	290.2	281.0	250.0	271.1	180.3	30.2	28.4	32.1	45.8	65.6	67.9	7.0	12	17				554.7	702.8	578.3
DEATHS	173	193	228	192	188	164	18	16	7	43	62	39	6	19	41				435	480	489
OPERATIONS																					
a) Major	585	459	508	80	164	135	-	-	-	8	5	2	-	-	-				643	623	503
b) Minor	773	835	738	613	551	811	-	-	-	29	60	76	-	-	-				1415	1386	1257
X-RAY																					
a) Examinations	5307	6215	7553	3513	3953	3901	-	-	-	374	674	955	-	-	-				9194	10168	7441
b) Screening	131	142	52	-	-	3	-	-	-	-	-	-	-	-	-				135	142	171
OUT-PATIENTS																					
a) 1st Attendances																					
i) Full-paying	4421	2919	4383	364	130	217	40	54	22	167	222	158	-	390	363				4992	4715	5143
ii) Part-paying	19895	21021	20037	12680	13285	10964	6404	6862	8054	9720	8134	7761	10805	8221	10028				64772	62697	56844
b) Sub. Attendances																					
i) Full-paying	4362	3468	2997	219	79	140	31	2	6	35	16	5	215	489	487				4362	4054	3635
ii) Part-paying	35773	32311	20734	9328	11165	7767	3040	941	2843	1518	1364	1848	5540	6200	9431				56465	52992	42623
GRAND TOTAL	64451	60719	48151	22591	24659	19088	9515	7859	10925	11440	9736	9772	116560	15300	20309				131091	124458	108245

1. 3. SUBSIDISED MISSION HOSPITALS:

	Raleigh Fitkin Memorial Hospital			Good Shepherd Hospital			Totals		
	1965	1966	1967	1965	1966	1967	1965	1966	1967
BEDS									
a) Full-paying	15	15	23	5	5	5	20	20	28
b) Part-paying	260	260	297	62	62	62	322	322	359
ADMISSIONS									
a) Full-paying	543	540	573	29	132	147	572	672	720
b) Part-paying	5500	5204	5966	1172	1575	1478	6672	6779	7444
DAILY AVERAGE NO. OF IN-PATIENTS									
a) Full-paying	10.9	9.9	10.0	.4	1.8	1.5	11.3	11.7	11.5
b) Part-paying	299.0	262.0	259.14	43.1	47.3	34.9	342.1	309.3	294.04
DEATHS	255	304	339	40	42	31	295	346	370
OPERATIONS: a) Major	653	591	590	–	272	28	653	863	618
b) Minor	1385	814	950	145	35	202	1530	849	1152
X-RAY:									
a) Examinations	4169	3706	4460	361	461	2025	4530	4167	6485
b) Screenings	–	–	–	20	–	–	24	–	–
OUT-PATIENTS a) 1st attendances in (1) Full-paying Section	3003	2532	2320	656	955	1191	3659	3487	3511
(2) Part-paying Section	15763	13885	8497	6801	13703	14226	22564	27588	22723
b) Subsequent attendances in (1) Full-paying Section	1829	1700	2868	266	435	414	2095	2135	3282
(2) Part-paying Section	9571	11181	15444	2411	3247	5214	11982	4428	20658
GRAND TOTALS	30166	27298	29129	10134	18340	21045	40300	47638	50174

1. 4. SUBSIDISED MISSION CLINICS:

	Totals			Mission Totals		
	1965	1966	1967	1965	1966	1967
Nazarene Missions						
Stegi	8049	7302	6488			
Endingeni	4994	5105	3607			
Pigg's Peak	2184	3968	4065			
Mliba	1696	2776	2167			
Mafutheni	1055	1463	1460			
Bhekinkhosi	1574	3784	1786			
Balegane	1752	2406	1981			
Malinda	2574	3042	3269			
Mayiwane	5371	6871	4761			
Tambankulu	10106	10179	9463			
Malandela	378	1025	411			
Lalela	834	1143	1364			
Thembelihle	824	1593	580			
Manzana	712	345	453			
Kashewula	305	318	598			
Engculwini	2479	1590	585			
Esigcawni		248	1199	45486	53158	44237
Roman Catholic Missions						
Our Lady of Sorrows	10172	9725	8955			
St. Juliana	10672	10401	7244			
Mathenjeni	1345	1061	1110	27523	21581	
San Michael		256	991			
San Boniface		138	670			33360
St. Mary's			14390			

++ Visited by Nurse-in-charge at Our Lady of Sorrows

2. Government Clinics

	Total Attendances			District Totals		
	1965	1966	1967	1965	1966	1967
MBABANE DISTRICT						
Eluyengweni Clinic	12396	16066	15094	12396	16066	15094
HLATIKULU DISTRICT						
Gege			6563			
Mhlotsheni	8574	8403	8366			
Hluti	14869	10221	7629			
Sipofaneni	11639	9508	12533			
Vimy Ridge	1632	983	1062			
Edwaleni +++	6076	6473	6109			
Mahamba			6615			
Lubuli +	7158	6570	6757			
St. Phillips Mission ++	5055	4921	4483			
New Haven Mission ++	13253	15838	13824			
Mobile Clinic			21317	68256	62917	96308
MANKAIANA DISTRICT						
Mahlangatsha	6339	7634	5856			
Dwalile	6767	7241	5553	13106	14875	11409
PIGGS PEAK DISTRICT						
Horo	19225	15090	15457			
Lesters +	8535	11634	7737			
Mhlangantane	9786	10544	13413			
Nkaba	1818	2329	3048	39364	39597	39655
STEGI DISTRICT						
Nomahasha +	1447	2184	3195	1447	2184	3195
MEDICAL OUTPOSTS (visited by Sister-in-charge, Mankaiana Hospital, but not staffed permanently by a nurse)						
Mgazini	4605	4268	1414			
Endinilembe	3593	1918	2149			
Mangqongqo	2102	2618	3008	10300	8804	6571

+ Clinic controlled by Swazi National Treasury, but visited and supervised by Government Medical Officers.

++ Mission Clinics visited and supervised by Government Medical Officers.

+++ Clinics at Missions, rented and run by the Medical Department.

2. HAVELOCK MINE HOSPITAL

The number of Africans who were not mine employees or their dependants who were treated at the Havelock Mine Hospital during 1966 was as follows:

Number of Admissions		262
Number of Out-patients	New cases	896
	Reattendances	1436
In-patient days		1607
Daily number of In-patients		45

3. MEDICO-LEGAL POSTMORTEM EXAMINATIONS

The number of medico-legal post-mortem examinations carfied out at Government and subsidised Mission Hospitals from 1964 to 1966 were as follows:

	1964	1965	1966	1967
Mbabane Hospital	46	51	33	43
Raleigh Fitkin Memorial Hospital	106	94	87	77
Piggs Peak Hospital	26	31	60	67
Good Shepherd Hospital	24	35	56	70
Hlatikulu Hospital	45	50	91	44

Medico-legal requests from the Police for the examination of Assault and Rape cases totalled 398 at Mbabane Hospital. Figures from other centres are not available at present. 37 examinations were done at Mbabane Hospital in cases of alleged driving under the influence of liquor or drugs.

CHAPTER IV

MATERNITY AND CHILD WELFARE SERVICES

Ante-Natal Clinics, outside of hospitals, produce the following figures, which are not complete, as not all clinics were notified early in the year to keep records:

	1966	1967
Mbabane District		1085
Mankaiana		373
Hlatikulu District		4672
Stegi District		206
Manzini District	2069	No return
Piggs Peak District	47	378

Child Welfare Clinics

	1966	1967
Mbabane District	272	5128
Mankaiana District		2535
Piggs Peak District	52	No return
Manzini District	2940	No return
Hlatikulu District		6991

The number of ante-natal examinations and confinements for the past four years has been as follows:

	Ante-Natal Examinations				Confinements			
	1964	1965	1966	1967	1964	1965	1966	1967
Mbabane Hospital	2132	3302	3644	2385	756	842	1047	1043
Hlatikulu Hospital	843	941	1274	908	355	405	539	644
Mankaiana Hospital	331	254	304	364	103	142	147	177
Piggs Peak Hospital	779	924	650	976	231	250	286	254
Raleigh Fitkin Memorial Hospital	2083	3264	3181	3291	1074	1202	1139	1319
Good Shepherd Hospital	953	1330	1428	2532	226	224	130	177

CHAPTER V

LABORATORY SERVICES

Histological examinations and other special investigations are carried out by the South African Institute for Medical Research in Johannesburg.

Small laboratories are situated in the following hospitals - Mbabane, Hlatikulu, and Raleigh Fitkin Memorial, and Good Shepherd are equipped for carrying out simple routine tests.

The W.H.O. TB. Project Laboratory in Manzini now undertakes all examinations for tuberculosis both for hospitals and private practitioners. The Laboratory at the Health Office in Manzini undertakes all examinations for malaria and bilharzia; the results of these examinations are reported under the sections dealing with Malaria and Bilharzia and are not included in the figures which follow:

a) PATHOLOGY LABORATORY MBABANE

Test	1963	1964	1965	1966	1967
Blood Culture	308	235	469	223	.210
Widal (TMX)	864	517	1036	955	901
Paul Bunnell Test	13	15	30	6	2
Stool Culture	147	223	253	204	129
Stool Parasitology	19	28	40	75	177
Urine Chemistry	12	5	7	161	504
Urine Culture	90	115	635	144	94
Urine Bilharzia	49	42	52	67	139
T.B. direct	74	51	26	45	55
Blood sugar	54	74	75	86	132
Blood Urea	94	72	197	157	120
Serum Protein	42	80	50	24	109
Serum Bilirubin	23	42	45	73	73
Blood Cholestrol	8	15	22	18	25
Blood Amylase	4	8	19	5	9
Serum Calcium	9	15	30	9	5
Serum Phosphatase	7	15	31	26	37
C.S. Fluid	48	66	82	86	100
Malaria Slides	2	12	2	2	163
Culture	244	264	294	297	244
Sensitivity tests	288	392	475	388	255
Blood Grouping	6	16	14	27	65
Blood Count	27	60	209	91	30
E.S.R.	6	25	190	74	9
Slides for Microscopy	6	12	17	20	10
Diphtheria	108	38	20	8	18
Water Analysis	181	147	148	217	234
Milk Analysis	80	134	128	251	234
V.D.R.L. Tests	8515	5846	8480	11205	10635
Hb. Tests	-	-	-	83	82
TOTAL	11474	8707	12891	15471	14639

During November and December, 1967 and January, 1968, Routine stool, urine and haemoglobin examination for the Public Health Survey in Msunduza were done amounting to 1001 people. Total therefore, is 15640.

(b) HOSPITAL LABORATORIES

	Mbabane Hospital				Hlatikulu Hospital				Raleigh Fitkin Memorial Hospital				Piggs Peak Hospital (1 month)
	1964	1965	1966	1967	1964	1965	1966	1967	1964	1965	1966	1967	1967
Urine Examination (including microscopy)	12332	15464	12972	16729	2173	3323	3627	4749	9509	10019	10366	8594	14
Stool Examinations	3759	4089	859	1220	876	1121	1341	911	158	305	285	12	-
Sputum Examinations	5345	3265	1741	240	2590	287	231	233	720	276	72	15	-
Other Bacteriological Smears	558	9417	794	1896	108	82	370	-	161	160	23	3	-
Full Blood Counts	917	1147	3263	236	49	236	187	48	789	1104	1571	970	1
Red Cell Counts	161	221	177	109	49	40	326	35	-	6	9	11	-
White Cell Counts	191	191	30	581	241	437	418	410	33	40	476	219	3
E.S.R.	791	717	626	273	62	24	87	165	782	1060	765	266	1
Haemoglobin Examinations	-	-	-	1586	204	227	-	773	586	-	2625	2069	-
Blood Films for Parasitology	-	-	-	163	71	242	-	-	-	-	299	-	-
Other Examinations	43	18	51	11	20	4	22	13	1556	2590	1919	7655	-
	24087	35528	19513	23044	6443	6023	6456	7337	14294	15560	18110	19814	19

CHAPTER VI

FINANCE

The financial statement of the Ministry for the period 1st April, 1967 to 31st March, 1968 is as follows:-

Revenue	1966/67	1967/68
	R	R
Hospital, Health Centre and Other fees	37461	42135
Expenditure		
Personal Emoluments	239712	285759
Travelling Expenses	8459	13538
Operation and Maintenance of Vehicles	2046	2306
Other Transport Charges	10594	11071
Allowances and Fees - Medical	3809	3971
Maintenance of Patients	72110	105037
Maintenance of Mental Patients	10487	16250
Lighting and Heating	13220	25160
Hospital Equipment	12747	10361
Upkeep of Grounds	99	658
Temporary Reliefs	4948	4344
Anti-Malaria Measures	4430	28816
Bilharzia Control	871	389
Laboratory Services	2083	2991
Public Health Measures	154	200
Grants to Missions	58163	58548
High Commission Territory Nursing Council	347	466
Office Equipment	195	499
Uniforms and Protective Clothing	3034	3922
	447508	574286
CD & W Scheme Expenditure		
D. 4912 Extensions to Medical Services	247935	211835
D. 4913 Tuberculosis Control Scheme	32760	30670
D. Construction of Clinics	12226	8523
	292921	251028
Total Expenditure on Medical and Sanitary Services	640429	825314
Total Revenue of Territory (Excluding Grant-in-Aid from U.K.)	6804809	8565683
The Relationship of Medical Services (Territorial) to Total Revenue of Territory	9.41%	9.63%

CONCLUSION:

I wish to express my sincere appreciation of the loyal and efficient manner in which members of the Department carried out their duties during the year.

J.M.L. KLOPPER
DIRECTOR OF MEDICAL SERVICES

APPENDIX I

MEDICAL DEPARTMENT STAFFING (AS AT 31-12-67)

a) Division I & II	Name	Station
Director of Medical Services	Dr. C. Runciman	Mbabane
Deputy Director of Medical Services	Dr. J.M. Klopper	Mbabane
Consulting Opthalmic Surgeon (Part-time)	Dr. G. Frampton	
Senior Medical Officer	Dr. F. Friedman	Hlatikulu
Medical Officers of Health	Dr. G.G. Murphy	Mbabane
	Dr. H.C. Armstrong	Manzini
Medical Officers	Dr. S.P.M. Shongwe	Mbabane
	Dr. F.J. Copeland	Piggs Peak
	Dr. L. van der Veer	Hlatikulu
	Dr. P.A. Kennedy	Mbabane
	Dr. J.P. O'Connor	Mbabane
	Dr. T.G. Behan	Mbabane
	Dr. W.J.L. Downing	Mbabane
	Dr. H.F. Hawthorne	Hlatikulu
	Dr. M.S. Compton	Mbabane
	Dr. E.M. Farrell	Hlatikulu
	Dr. R.H.O. Parker	Goedgegun
Senior Executive Officer	Mr. E.L. Samuda	Mbabane
Hospital Secretary	-	-
Pharmacist/Storekeeper	Mr. G.R. Gibbon	Mbabane
	Mr. J.L. van der Vyver	Hlatikulu
Laboratory Technician	Mrs. M.E. Gibbon	Mbabane
Smear Examiner	Mr. P.M. Matthews	Manzini
Senior Health Inspector	Mr. D.M. Eckard	Manzini
Health Inspectors	Mr. L. Mtetwa	Mbabane
	Mr. C.D. Nxumalo	Manzini
	Mr. L.M. Mbabama	Goedgegun
	Mr. Z. Zandemela	Mbabane
	Mrs. A.C.I. Mabuza	Mbabane
Matrons	Mrs. P.I. Mdiniso	Hlatikulu
Nursing Sisters	Mrs. S.B. Dowling	
	Mrs. V.M. Mabuza	
	Mrs. N.N. Dludlu	
	Mrs. M.B. Masipa	
	Mrs. D.M. Bengu	
	Mrs. G.T. Abrahams	
	Mrs. E. Mtetwa	
	Mrs. E. Mpongose	
	Mrs. A. Dlamini	
	Mrs. F. Dlamini	
	Mrs. T. Masuku	
	Mrs. A. Khanyile	
	Mrs. J. Mtetwa	
	Mrs. Eva Mtetwa	
	Mrs. S. Khoza	
	Miss J. Khumalo	
	Mrs. A. Mahluza	
	Mrs. E. Nxumalo	
	Mrs. J. Zwane	
	Mrs. I.J. Shilubane	
	Mrs. E. Simelane	

Division I & II(cont.)

Radiographer	Mrs. V. Elyan
Medical Assistant	Mr. A.F.K. Phiri
Health Educator	Mr. R.L. Phillips
Accountant	Mr. J.C. Mapumulo
Personal Assistant	Mrs. I. Lewis
Stenographer	Miss S. MoCabe
Handyman	Mr. W.Q. Mordaunt
Housekeeper	Mrs. E.I. Dlamini Mrs. Morake

b) Division III	No.
Dispensers	7
Laboratory Assistants	8
X-Ray Assistants	2
Clerks	10
Nurses	165
Driver/Handyman	20
Senior Malaria Assistant	1
Malaria Assistants	10
Vaccinator	1
Senior Ward Orderlies	3
Dispensary Orderlies	6
Ward Orderlies	54
Nurse Aides	33
Wardmaids	3
Laundresses	22
Seamstresses	3
Office Messengers	2
Nightwatchmen	7
Groundsmen	6
Cooks	16
Telephonists	2
Housemaids	7
Senior Mental Patient Attendant	1
Copy Typist	1
Mental Patient Attendants	13
Home Visitors	11

APPENDIX II

RETURN OF CASES TREATED - GOVERNMENT AND MISSION HOSPITALS - 1967

Detailed List No.	Group Causes	Total Cases	Out-Patients	In-Patients	Deaths
001-008	Tuberculosis, Respiratory System	1090	297	692	101
010	Tuberculosis of Meninges or C.N.S.	12	3	4	5
011	Tuberculosis of Intestines and Peritoneum	13	-	12	1
012-013	Tuberculosis of Bones and Joints	83	31	51	1
014-019	Tuberculosis - All other forms	159	119	39	1
020	Congenital Syphilis	34	22	12	-
021	Early Syphilis	405	391	14	-
024	Tabes Dorsalis	3	1	2	-
022-023) 026-029)	All other Syphilis	473	441	32	-
030-035	Gonoccal Infection	1606	1561	43	2
036-039	Other Venereal Diseases	47	39	7	1
040-041	Enteric Fever	127	4	113	10
044	Brucellosis	1	-	1	-
045	Bacillary Dysentery	335	212	115	8
046	Amoebiasis	339	176	160	3
052	Erysipelas	15	14	1	-
055	Diphtheria	26	20	3	3
056	Whooping Cough	832	669	155	8
057	Meningococcal Infections	9	3	6	-
060	Leprosy	9	4	5	-
061	Tetanus	39	-	25	14
080-083	Late Effects of Poliomyelitis	4	-	4	-
084	Smallpox (Variola Minor)	25	15	10	-
085	Measles	714	465	238	11
092	Infectious Hepatitis	82	9	66	7
104	Tick-bite Fever	9	7	2	-
116	Malaria	66	15	49	2
123-1	Bilharzia (Vesical)	584	515	67	2
123-0	Bilharzia (Intestinal)	5	4	1	-
126	Tape Worm	316	292	24	-
130-0	Ascariasis	654	494	160	-
124-128) 130-1)	Other Helminthic Diseases	615	614	1	-
049	Poisoning - Food	18	9	8	1
087	Chicken Pox	185	166	19	-
131	Dermatophytosis	544	524	20	-
135	Scabies	1187	1131	56	-
137-138	Other Infective and Parasitic Diseases	42	31	11	-
140-150	Malignant Neoplasms of (a) Mouth, Pharynx and Oesophagus	13	-	9	4
151-154	(b) Stomach, Intestine, Rectum	11	1	8	2
161-163	(c) Larynx, Trachea, Lung	9	1	7	1
170	(d) Breast	4	1	3	-
171	(e) Cervix Uteri	37	3	30	4
172	(f) Body of Uterus	2	-	2	-
177	(g) Prostate	4	1	3	-
191-9	(h) Skin	1	-	1	-
196-7	(i) Bone and Connective Tissue	5	1	4	-
199	(j) All Other Sites	37	2	28	7

Leukaomia/..........

Detailed List No.	Group Causes	Total Cases	Out-Pat-ients	In-Pat-ients	Deaths
204	Leukaemia	4	-	4	-
210-239	Benign Neoplasms	238	125	112	1
250-251	Non-Toxic Goitre	111	98	13	-
252	Thyrotoxicosis	13	9	4	-
260	Diabetes Mellitus	71	35	35	1
281	Pellagra	840	743	84	13
282	Scurvy	71	62	9	-
286-6	Kwashiorkor	654	357	263	34
286-5-	Malnutrition unqualified	876	487	353	36
290	Hyperchromic Anaemias	12	12	-	-
291	Hypochromic Aneamias	5	-	5	-
292-293	Anaemia, unspecified	194	145	47	2
241	Asthma	498	361	137	-
240,242) 245)	Other Allergic Disorders	285	251	34	-
300-309	Psychoses	18	6	11	1
310,324) 326	Psychoneuroses and Hysteria	123	77	45	1
325	Mental Deficiency	86	42	44	-
330-334	Vascular Lesions of C.N.S.	21	11	9	1
340	Meningitis (Non-Meningococcal)	33	9	17	7
353	Epilepsy	204	125	75	4
370-379	Inflammatory Diseases of Eye	1118	1000	118	-
385	Cataract	71	34	37	-
387	Glaucoma	7	4	3	-
390	Otitis Externa	685	650	35	-
391-393	Otitis Media & Mastoiditis	1052	884	167	1
380-384	All other Diseases of Eye	420	333	84	3
341-344	All other Diseases if C.N.S. and Sense Organs	222	130	88	4
400-402	Rheumatic Fever	145	137	8	-
410-416	Chronic Rheumatic Heart Disease	161	113	43	5
420-422	Arterio-Sclerotic & Degenerative Heart Disease	200	76	104	20
430-434	Other Diseases of Heart	338	224	100	14
440-443	Hypertension & Heart Disease	141	126	13	2
444-447	Hypertension	544	434	101	9
450-456	Diseases of Arteries	30	23	7	-
460-468	Other Diseases of Circulatory System	326	266	57	3
470-475	Acute Upper Respiratory Tract Infections including Acute Tonsillitis	5116	4492	621	3
480-483	Influenza	1262	1027	235	-
490	Lobar Pneumonia	277	116	160	1
491	Broncho-Pneumonia	1983	1389	673	21
492-493	Atypical Pneumonia	198	70	119	9
500	Acute Bronchitis	3081	2483	597	1
501-502	Bronchitis, Chronic and Unspecified	1690	1421	266	3
512	Chronic Pharyngitis and Chronic Tonsillitis	455	315	140	-
518-521	Empyema & Lung Abcess	25	8	15	2
519	Pleurisy	234	177	56	1
523	Pneumoconiasis	17	16	1	-
520-522	Other Respiratory Diseases	629	587	41	1
530	Dental Caries	4670	4605	65	-
531-535	All other diseases of Teeth and Gums	626	537	88	1

Gastric/................

Detailed List No.	Group Causes	Total Cases	Out-Pat-ients	In-Pat-ients	Deaths
540	Gastric Ulcer	136	76	58	2
541	Duodenal Ulcer	24	18	6	-
543	Gastritis and Duodenitis	900	712	187	1
550-553	Appendicitis	177	55	121	1
570	Intestinal Obstruction	49	10	35	4
560	Hernia	85	38	46	1
570-0	Gastro-enteritis (4 weeks to 2 years)	4988	3929	979	80
570-1	Gastro-enteritis (over 2 years)	3679	2918	667	94
572	Chronic Enteritis and Colitis	447	429	18	-
581	Cirrhosis of Liver	194	79	97	18
584-585	Cholecystitis	75	53	21	1
536-539) 544-573) 580-582) 583-586) 587)	Other Diseases of Digestive System	2580	2189	385	6
590	Acute Nephritis	67	29	38	-
591-594	Chronic Nephritis	79	36	37	6
600	Infections of Kidney	208	143	65	-
602,604	Calculi of Urinary System	7	6	1	-
610	Hyperplasia of Prostate	28	9	19	-
620,621	Diseases of Breast	218	145	73	-
613	Hydrocale	94	60	34	-
634	Disorders of Menstruation	1819	1454	365	-
601,603) 605,609) 611,612) 614-617) 622-633) 635-637	All other Diseases of Genito-Urinary System	6693	5637	1053	3
660	Normal Deliveries	3209	-	3209	-
671) 673-678)	Deliveries with Complications	517	-	508	9
640,641) 681,682) 684)	Sepsis of Pregnancy Childbirth and Puerperium	95	60	35	-
642	Toxaemia of Pregnancy	45	12	33	-
643,644) 670,672)	Haemorrhage of Pregnancy and Childbirth	10	4	6	-
650	Abortion	795	182	610	3
651	Abortion with Sepsis	49	29	19	1
690-698	Infections of Skin and Subcutaneous Tissues	3431	2815	616	-
720-727	Arthritis and Spondylitis	319	233	86	-
726,727	Muscular Rheumatism and Rheumatism Unqualified	1907	1689	218	-
730	Osteomyelitis and Peri-Ostitis	139	62	77	-
737, 745) 749)	Ankylosis and Acquired Musculo-Skeletal Deformity	87	48	39	-
700-714	All other Diseases of Skin	1413	1243	169	1
731-736	All other Diseases of Musculo-Skeletal System	226	163	63	-
750-759	Congenital Malformations	100	40	57	3
760-762	Birth Injuries	16	6	7	3
765	Ophthalmia Neonatorum	45	39	6	-
770	Haemolytic Disease (Neo-Natal)	37	30	5	2
773-776	Other Diseases Early Infancy	363	148	150	65

Detailed List No.	Group Causes	Total Cases	Out-Pat-ients	In-Pat-ients	Deaths
791	Senility	78	67	8	3
788-9	P.U.O.	713	580	129	4
788-1- 788-7 788-9 789-792 795	All Other Ill-defined Causes of Morbidity	543	296	232	15
793	Observation without need for further care	406	-	406	-
"E" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONING AND VIOLENCE (EXTERNAL CAUSE)					
E810-E835	Motor Vehicle Accidents	1000	533	454	13
E800-E802	Other Transport Accidents	209	115	91	3
E870-E895	Accidental Poisoning	255	122	127	6
E900-E904	Accidental Falls	1462	807	652	3
E612	Accidents caused by Machinery	226	182	44	-
E916	Accidents caused by Fire	321	184	129	8
E917, E918	Accidents caused by Hot substances and corrosives	303	242	60	1
E919	Accidents caused by Firearms	35	25	10	-
E910-E913 E915,E920- E928,E930 E965	All other accidental causes	2474	1712	759	3
E970-E979	Suicide & Self-Inflicted Injury	15	4	11	-
E980-E985	Assault, Homocide	2051	874	1142	35
"N" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONING AND VIOLENCE (NATURE OF INJURY)					
N800-N804	Fracture of Skull	203	41	146	16
N805-N809	Fracture of Spine and Trunk	99	26	72	1
N810-N829	Fracture of Limbs	1182	543	635	2
N830-N839	Dislocation	124	53	71	-
N840-N848	Sprains and Strains	715	599	116	-
N850-N856	Head Injury (Excluding Fracture)	561	299	257	5
N860-N869	Internal Injury, Chest, Abdomen and Pelvis	99	6	84	9
N870-N908	Laceration & Open Wounds	3043	1906	1116	21
N910-N929	Superficial Injury - Contusion	1236	764	472	-
N930-N936	Foreign Body entering through Orifice	212	129	83	-
N940-N949	Burns	593	397	183	13
N960-N979	Effects of Poison	224	43	173	8
N950-N959 N980-N999	All other effects of External Causes	174	86	86	2

Medical/................

Detailed List No.	Group Causes	Total Cases	Out-Patients	In-Patients	Deaths
Y00	Medical Examinations, Boards and Tax Exemption Examinations	2114	2114	-	-
Y02	Prophylactic Injections:				
	a) Smallpox Vaccination	4046	4046	-	-
	b) T.A.B.	24	24	-	-
	c) Diphtheria	-	-	-	-
	d) Diphtheria and Whooping Cough	-	-	-	-
	e) Diphtheria, Whooping Cough and Tetanus	765	765	-	-
	f) Tetanus	50	50	-	-
	g) Poliomyelitis	8	8	-	-
	h) Yellow Fever	214	214	-	-
	i) Cholera	8	8	-	-
Y06	Ante-Natal Examinations	8146	8146	-	-
Y08	Attendants admitted as In-Patients with sick Children	1272	-	1272	-
TOTAL "NEW" PATIENTS		111,483			

SUBSEQUENT ATTENDANCES

Subsequent Ante-Natal Attendances	3685
Subsequent Prophylactic Injections	1037
All Other Subsequent Attendances	57373
GRAND TOTAL SUBSEQUENT ATTENDANCES	62095

OF HYGIENE
LIBRARY
AND TROPICAL